Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Claims 1, 7, 8, and 9 are amended.

Listing of Claims:

1. (Currently Amended) Method ~~for the making of~~ of processing a physical signal transmitted between a sender and a receiver through a transmission channel, the method comprising:

input of said physical signal into a digital Nyquist filter with null inter-symbol interference ~~designed to process a physical signal transmitted between a sender and a receiver through a transmission channel,~~ said Nyquist filter being

an Nth order $P(z) = F^2(z)$ symmetrical filter implementing an oversampling factor M=4 and forming a matched pair,

~~comprising~~ comprised of a sending filter (12) and a reception filter (15) ~~whose~~ which provide a polyphase breakdown of F(z) ~~can be written~~ as follows:

$$F(z) = F_0(z^4) + z^{-1}F_1(z^4) + z^{-2}F_2(z^4) + z^{-3}F_3(z^4)$$

characterized in that N is different from 4n, n being an integer:

and in that:

[[If]] if N=4n+1, $F_1(z)\,\hat{F}_1(z) + z^{-1}F_2(z)\,\hat{F}_2(z) = \gamma z^{-n}$,

[[If]] if N=4n+2, $2F_0(z)\,\hat{F}_0(z) + F_1^{\,2}(z) + z^{-1}F_3^{\,2}(z) = \gamma z^{-n}$,

[[If]] if N=4n+3, $F_0(z)\hat{F}_0(z) + F_1(z)\hat{F}_1(z) = \gamma z^{-n}$,

$\hat{F}$ being ~~the~~ a mirror symmetry of F and γ being a non-null constant,

P(z) being said Nyquist filter,

F(z) being said sending and reception filter,

z being a continuous complex variable,

N being an order (number of taps) of the filter.

2. (Original) Method according to claim 1, characterized in that N is equal to 4n+3 or 4n+1 and:

said sending filter (12) performs an interpolation (121) by a factor M = 4 and has a circuit arrangement corresponding to a polyphase breakdown known as the type II breakdown, such that:

$$F(z) = [z^{-3} z^{-2} z^{-1} 1]\begin{bmatrix}\hat{F}_0(z^4)\\ \hat{F}_1(z^4)\\ F_1(z^4)\\ F_0(z^4)\end{bmatrix}$$

and said reception filter (15) performs a decimation (152) by a factor M = 4 and has a circuit arrangement corresponding to a polyphase breakdown known as the type I breakdown, such that:

$$F(z) = [F_0(z^4)\, F_1(z^4)\, F_1(z^4)\, F_0(z^4)]\begin{bmatrix}1\\ z^{-1}\\ z^{-2}\\ z^{-3}\end{bmatrix}$$

3. (Previously Presented) Method according to claim 1, characterized in that, in said sending filter (12), a filtering step followed by a step of interpolation by a factor of M=4 is performed.

4. (Previously Presented) Method according to claim 1, characterized in that, in said reception filter (15), a step of decimation by a factor M=4 is perfromed, followed by a filtering step.

5. (Previously Presented) Method according to claim 1, characterized in that said sending filter (12) and/or said reception filter (15) have a structure in the form of at least one lattice.

6. (Original) Method according to claim 5, characterized in that said sending filter (12) and said reception filter (15) are each constituted by a pair of polyphase components respectively given by the following equations:

$$\begin{bmatrix} -F_0 \\ F_1 \end{bmatrix} = gA(\alpha_n)A(z)A(\alpha_{n-1})\ldots A(z)A(\alpha_0)\begin{bmatrix} 0 \\ 1 \end{bmatrix}$$

with: $A(\alpha) = \begin{bmatrix} 1 & \alpha \\ -\alpha & 1 \end{bmatrix}$ and $A(z) = \begin{bmatrix} 1 & 0 \\ 0 & z^{-1} \end{bmatrix}$

where g is a non-null constant of standardization and α_i are real coefficients.

7. (Currently Amended) Method according to claim 6, characterized in that said sending filter ~~it~~ implements a two-lattice structure.

8. (Currently Amended) Method according to claim 6, characterized in that said sending filter ~~it~~ implements a single-lattice structure.

9. (Currently Amended) ~~Device~~ A filter device providing for

~~the~~ filtering of Nyquist digital signals with null inter-symbol interference, and

~~designed to process~~ processing of a physical signal ~~transmitted between a sender and a receiver through a transmission channel,~~;

said filter ~~being based on~~ consisting of

an Nth order $P(z) = F^2(z)$ symmetrical filter implementing an oversampling factor M=4 and forming a matched pair, comprising

a sending filter (12), having the physical signal to be sent, X(z), as an input, where an output signal of said sending filter is sent through a transmission channel (14) to

a reception filter (15), where the reception filter provides an output signal S(z),

where ~~the~~ a polyphase breakdown of F(z) of ~~this~~ said symmetrical filter ~~being~~ is written as follows:

$$F(z) = F_0(z^4) + z^{-1}F_1(z^4) + z^{-2}F_2(z^4) + z^{-3}F_3(z^4),$$

characterized in that N is different from 4n, n being an integer,

[[If]] if N=4n+1, $F_1(z)\,\hat{F}_1(z) + z^{-1}F_2(z)\,\hat{F}_2(z) = \gamma z^{-n},$

[[If]] if N=4n+2, $2F_0(z)\,\hat{F}_0(z) + F_1^{\,2}(z) + z^{-1}F_3^{\,2}(z) = \gamma z^{-n},$

[[If]] if N=4n+3, $F_0(z)\,\hat{F}_0(z) + F_1(z)\,\hat{F}_1(z) = \gamma z^{-n},$

$\hat{F}$ being ~~the~~ a mirror symmetry of F and γ being a non-null constant,

P(z) being said Nyquist filter,

F(z) being said sending and reception filter,

z being a continuous complex variable,

N being an order (number of taps) of the filter.